In the Claims

1. (Cancelled).

2. (Previously presented) The apparatus of Claim 34, wherein one of the sensor and the catheter is configured to locate the sensor with respect to the vessel to minimize wall effects.

3. (Previously presented) The apparatus of Claim 34, further comprising a controller operably connected to the sensor to calculate a flow rate corresponding to the signal from the downstream sensor.

4. (Currently Amended) The apparatus of Claim 34, wherein the temperature gradient generator has a blood property change port which includes an aperture for introducing a blood property variant.

5. (Currently Amended) The apparatus of Claim 4 [[34]], wherein the blood property change port and the sensor are spaced by a sufficient distance to substantially mix a dilution indicator introduced through the port and the blood flow.

6. (Currently Amended) The apparatus of Claim 34, wherein the ~~blood property change port~~ temperature gradient generator includes one of a heat sink and a heat source for creating a local temperature gradient.

7. (Cancelled).

8. (Cancelled).

9. (Previously presented) A stenosis reducing catheter, comprising:

(a) a catheter body having a stenosis reducing member selectively actuatable to reduce stenosis in a vessel;

(b) one of a local heat source and local heat sink affixed to the catheter body for inducing a blood property change to blood flowing external to the stenosis reducing catheter, the one of the local heat

source and local heat sink located a fixed distance from the stenosis reducing member; and

(c) a sensor affixed to the catheter body and spaced a given distance from the local heat source and local heat sink for providing a signal corresponding to a change in a blood property external to the stenosis reducing catheter.

10. (Previously presented) The catheter of Claim 9, wherein one of the sensor and the catheter is configured to locate the sensor with respect to the vessel to minimize wall effects.

11. (Previously presented) The catheter of Claim 9, further comprising a controller operably connected to the sensor to calculate the flow rate corresponding to the signal from the downstream sensor.

12. (Currently Amended) The catheter of Claim 35 [[9]], wherein the dilution indicator introduction port includes an aperture for introducing a blood property variant.

13. (Currently Amended) The catheter of Claim 35 [[9]], wherein the ~~blood property change~~ dilution indicator introduction port and the sensor are spaced by a sufficient distance to substantially mix a dilution indicator introduced through the port and the blood flow.

14. (Currently Amended) The catheter of Claim 35 [[9]], wherein the dilution indicator introduction port includes one of a heat sink and a heat source for creating a local temperature gradient.

15. (Currently Amended) An apparatus for determining blood flow, comprising:

(a) a dilution indicator source;

(b) a catheter connectable to the dilution indicator source, the catheter having surgical revision means for performing a vascular corrective procedure, a dilution indicator port for passing a dilution indicator ~~therethrough to pass~~ from the catheter and a downstream sensor a fixed distance from the indicator port for producing a signal corresponding to passage of the dilution indicator external to the catheter; and

(c) a controller connected to the dilution indicator source and the sensor for calculating a blood flow in response to the signal from the sensor.

16. (Previously presented) A method for quantitatively measuring a reduced stenosis induced flow change, comprising:

(a) inserting a catheter and a blood property sensor into a vessel having a blood flow corresponding to the stenosis;

(b) introducing from an indicator source a first change in a blood property in a blood flow outside the catheter at a fixed distance from the blood property sensor and upstream of the blood property sensor;

(c) detecting passage of the first change in the blood property at the blood property sensor;

(d) reducing the stenosis in the vessel;

(e) introducing from the indicator source a second change in the blood property upstream of the sensor;

(f) detecting passage of the second change in the blood property at the blood property sensor; and

(g) determining at a controller connected to the indicator source and the sensor a change in blood flow corresponding to (i) the detected passage of the first change in the blood property and (ii) the second change in the blood property.

17. (Previously presented) The method of Claim 16, wherein inserting a catheter and a blood property sensor into a vessel includes inserting a first catheter having a stenosis reducing member and a second catheter having the blood property sensor, the first catheter and the second catheter being connected to locate the blood property sensor at a fixed location relative to the stenosis reducing member.

18. (Original) The method of Claim 16, wherein inserting a catheter and a blood property sensor into a vessel includes inserting a catheter having a stenosis reducing member and the blood property sensor.

19. (Previously presented) A method of monitoring blood flow during a vascular corrective procedure, comprising:

(a) inserting a catheter into a vessel;

(b) employing the catheter to perform a vascular correction in the vessel;

(c) introducing from an indicator source a first blood property change into a blood flow outside the catheter;

(d) detecting passage of the first blood property change past a downstream sensor on the catheter; and

(e) calculating the blood flow at a controller operably connected to the indicator source and the downstream sensor in

response to the change in blood property and passage of the blood property past the downstream sensor.

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) An apparatus for determining an intra-procedural blood flow in a vascular corrective procedure, comprising:

(a) a catheter;

(b) a temperature gradient generator on the catheter located to alter a blood parameter external to the catheter;

(c) surgical revision means for effecting the vascular corrective procedure, the means being located downstream of the temperature gradient generator; and

(d) a blood parameter sensor connected to the catheter downstream of the surgical revision means and spaced a fixed distance from the temperature gradient generator to sense the altered blood parameter external to the catheter and provide a signal for determining a blood flow.

23. (Cancelled).

24. (Previously presented) The apparatus of Claim 22, further comprising a controller connectable to the temperature gradient generator and the blood parameter sensor to calculate the blood flow.

25. (Previously presented) A method of monitoring a stenosis reducing procedure in a vessel, comprising:

(a) locating a blood parameter altering section connected to a rate and volume measured indicator source in the vessel to alter a blood parameter in a blood flow contacting the vessel;

(b) locating a blood parameter sensor a fixed distance downstream of the altering section;

(c) performing the stenosis reducing procedure; and

(d) determining in a controller connected to the indicator source and the blood parameter sensor a blood flow in response to a passage of an altered blood property past the blood parameter sensor.

26. (Original) The method of Claim 25, wherein performing the stenosis reducing procedure includes angioplasty.

27. (Original) The method of Claim 25, further comprising locating the blood parameter sensor to reduce wall effects from the vessel.

28. (Original) The method of Claim 25, further comprising rotating the blood parameter sensor with respect to the vessel to reduce wall effects from the vessel.

29. (Original) The method of Claim 25, further comprising locating a plurality of blood parameter sensors in the vessel.

30. (Previously presented) The apparatus of Claim 34, wherein the sensor detects changes in one of electrical impedance and electrical resistance.

31. (Previously presented) The apparatus of Claim 34, wherein the sensor detects one of an optical, thermal, electrical, chemical or physical property of the blood.

32. (Previously presented) The catheter of Claim 35, wherein the sensor detects changes in one of electrical impedance and electrical resistance.

33. (Previously presented) The catheter of Claim 35, wherein the sensor detects one of an optical, thermal, electrical, chemical or physical property of the blood.

34. (Previously presented) An apparatus for determining a blood flow in a vessel, comprising:

(a) an elongate catheter having a stenosis reducing member, a local temperature gradient generator located to alter a blood property outside the catheter and a downstream sensor affixed to the catheter and spaced from the generator for producing a signal corresponding to the blood property in a blood flow in the vessel.

35. (Currently Amended) An apparatus for determining blood flow in a vascular passage, comprising:

(a) a catheter having surgical revision means for increasing the effective size of a portion of the vascular passage, the catheter including a dilution indicator introduction port and a downstream blood property sensor affixed to the catheter;

(b) an indicator source connected to the catheter for providing a known rate and volume of dilution indicator to the indicator introduction port; and

(c) a controller operably connected to the blood property sensor and the indicator source for calculating a blood flow through the vascular passage corresponding to a signal from the blood property sensor.

36. (Previously presented) The apparatus of Claim 34, wherein the volume of indicator introduced is one of a bolus and a constant infusion.

37. (Previously presented) The apparatus of Claim 35, wherein the volume of indicator introduced is one of a bolus and a constant infusion.

38. (Previously presented) The apparatus of Claim 15, wherein the dilution indicator source is selected to introduce one of a bolus injection and a constant infusion.

39. (Previously presented) The method of Claim 16, wherein introducing the first change in the blood property includes introducing one of a bolus injection and a constant infusion.

40. (Previously presented) The method of Claim 16, wherein introducing the second change in the blood property includes introducing one of a bolus injection and a constant infusion.

41. (Previously presented) The method of Claim 19, wherein introducing the first blood property change includes introducing one of a bolus injection and a constant infusion.

42. (Previously presented) The method of Claim 25, further comprising altering the blood property by introducing one of a bolus injection and a constant infusion.

43. (Cancelled).